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Returning to my trees: Connection to nature, wellness and clinical practice

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Returning to My Trees: Connection to Nature, Wellness and Clinical Practice

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Abstract

The human-nature connection is one that has been undeniably relevant since the earliest conception of the Anthropocene. Early on, this connection was unceasingly tangible and pervasive, confirmed through every aspect of life, but as time has progressed through the process of globalization, technological advancement and urban growth, we have undoubtedly distanced and fragmented this relationship. Numerous studies, across multiple populations and settings, have demonstrated a strong relationship between well-being of individuals and their exposure to nature and nature connectedness/relatedness, with impressive consensus displayed across findings. Connection with nature has been associated with improved holistic wellness, including cognitive, emotional, psychological and physical advantages, and some researchers have gone as far as to argue that the human-nature connection is a basic psychological need. This paper discusses the ways in which connection to nature may contribute to human wellness, explores potential avenues for clinicians to incorporate nature connection into their therapeutic work, and acknowledges some of the unique concerns and ethical considerations accompanying nature-based practice.

Returning to My Trees: Connection to Nature, Wellness and Clinical Practice

While the natural world existed and thrived long before the commencement of the human era, humankind cannot boast this same independence; the human-nature connection is one that has been undeniably relevant since the earliest conception of the Anthropocene. Originally, this connection was unceasingly tangible and pervasive, confirmed through every aspect of life, but as time has progressed and human civilization has advanced and evolved, we have undoubtedly distanced and fragmented this relationship. This growing disconnection between humans and nature has caused researchers to start questioning what impacts humankind may be experiencing as a result.

The progressive disconnection between humans and nature may be observed through the process of globalization, technological advancement and urban growth, lending to the development of an unfamiliar and fearful relationship between humans and the outdoor world (Bento & Dias, 2017). Paralleling this trajectory of decreased connection to nature, an additional phenomenon may be observed across populations, in exponential rises in mental illness, substance abuse, and medical diagnoses. This has been evidenced by a measurable decrease in health-related quality of life (HRQOL) across the U.S. between 2001 and 2013, despite a decrease in the overall mortality rate (Olfson, Wall, Liu, Schoenbaum, & Blanco, 2018). Although there is no verifiable causal relationship between declines in these biopsychosocial realms of human wellness and decreases in connection to nature, there is an observable correlation between these two factors. This correlation has led to increased interest in the relationship between human wellness and decreasing exposure to nature, even leading to the development of the term “nature deficit disorder” as a way of capturing this phenomenon (Louv, 2008).

For the sake of this paper, *nature* may be defined as, "the physical and biological world not manufactured or developed by people" (Sandifer, Sutton-Grier & Ward, 2015). Numerous studies have demonstrated a strong relationship between well-being of individuals and their exposure to nature and nature connectedness/relatedness, with impressive consensus displayed across scientific findings (Kuo, 2015). These benefits have been observed across multiple populations and settings, including communities, schools, and various clinical settings. Connection with nature has been associated with improved holistic wellness, including cognitive, emotional, psychological and physical advantages (Capaldi, Dopko & Zelenski, 2014). Related cognitive and psychological advantages include decreases in ADHD symptoms and improved academic performance among school age children (Reese, Lewis, Myers, Wahesh & Iversen, 2014). Emotional benefits linked to nature connectedness/relatedness have been demonstrated through measurable increases in positive affect, autonomy, personal growth, purpose in life, and self-acceptance (Nisbet, Zelenski & Murphy, 2011) as well as decreases in stress levels and aggressive behaviors (Reese et al., 2014).

In Welsh vernacular there is a phrase: "dod yn ôl at fy nghoed," which holds powerful dualistic meaning; as a figure of speech, it means "to return to a balanced state of mind," but when translated directly, it literally reads as "to return to my trees." Although there may be no conclusive causal relationship between a rupture in the human-nature connection and observable declines across human wellness domains, nature is a vital and abundant resource which remains largely untapped and under-utilized for the sake of prevention, renewal, and healing in the modern world. Within this paper, I explore the ways in which connection to nature may contribute to human wellness,

explore potential avenues for clinicians to incorporate nature connection into their therapeutic work, and acknowledge some of the unique concerns and ethical considerations accompanying nature-based practice.

Humans and Nature: Our History of Relationship

The human narrative depicts a story of progressive separation between humans and the natural world. For the first time in human history, more individuals live in urban than rural settings, including 4 in 5 Americans (United Nations, 2015), with Americans spending more than 90% of their time indoors (Frumpkin et. al, 2017). Relatedly, American adults spend an average of 10 hr and 39 min per day engaging with media (Nielsen, 2016) while children under 8 years old are spending an average of 1 hr and 55 min on screens daily, increasing to 7 hr and 38 min for those between ages 8 and 18 (Frumpkin et. al, 2017). This accounts for more than half of a child's average waking time spent on screens, with even more spent indoors, rather than engaging in outdoor environments. As humans shift towards more urbanized dwelling places and technology for entertainment and information, decreases in park visitation, outdoor recreational activities and outdoor child play may also be observed over the past couple of decades (Frumpkin et. al, 2017). As an unprecedented chasm has formed between humans and nature with the seemingly exponential growth in industrialism and urbanization, research has started to thoughtfully engage the question of what potential benefits could be lost from this estrangement.

Evolutionary psychology, which focuses on "the adaptation of psychological characteristics said to have evolved over time in response to social and ecological circumstances within humanity's ancestral environments," has engaged extensively over

the past four decades in this conversation (Seymour, 2016, p. 2). One of the most influential and robustly formed concepts to emerge on this topic is the *Biophilia* hypothesis. This hypothesis, first established by E.O. Wilson in 1984, asserts an innate affection that humans possess towards animals, plants, and all other living organisms, as well as our instinctual draw toward natural environments. Biophilia explains that this propensity and connection amongst humans with nature can be explained by our rich evolutionary history, which has occurred primarily within natural spaces over the past 200,000 years (Berto et al., 2018). Throughout the span of this evolutionary context, our ancestors' survival would have directly depended on one's attunement to the natural world, demonstrated through the ability to successfully locate water, food and shelter, orient oneself to time and space, and remain aware of potential predators (Capaldi, et al., 2014). This hypothesis has been foundational in the development of the field of ecopsychology and all subsequent research exploring humans and their innate affiliation for, and benefit from relationship with nature.

Significance of Nature Exposure and Nature Connectedness/Relatedness

In studying both the historical and present-day significance of this relationship between humans and nature, both exposure to nature and nature connectedness may be considered. Whereas *nature exposure* may be defined as one's access to, as well as physical and sensory exposure to natural images and elements, the terms *nature connectedness* or *nature relatedness* can be used interchangeably to reflect and measure "a stable individual difference in cognitive, affective, and experiential connection with the natural environment" (Capaldi, et al., 2014). Nature connectedness or relatedness may further be defined as the degree to which an individual considers nature to be a

component of their self-identity, the level of responsibility that someone considers themselves to possess in relationship to environmental wellness, and one's comfort in natural settings (Nisbet et al., 2009).

Whereas, there are general wellness benefits associated with increased exposure to nature, researchers have determined that one's level of nature connectedness may directly impact the level of benefit that individuals experience (Nisbet et al., 2009). In order to measure and assess for nature relatedness, several scales have been developed. Three of the most widely recognized and utilized of these scales are The Nature Relatedness Scale (Nisbet et al., 2009), The Connectedness to Nature Scale (Mayer & Franz, 2004), and the Inclusion of Nature in Self Scale (Schultz, 2002). Within these scales, examples of constructs used to assess one's subjective connection to nature include *emotional affiliation* (e.g., feelings of oneness with nature), *cognitive processes* (e.g., views about how nature overlaps with one's sense of self), *relationship commitment* (e.g., feelings of attachment to nature), as well as *personal experience and behavior* (e.g., time spent in nature) (Dean et al., 2018). In assessing these characteristics, researchers have also cross-analyzed and discovered positive correlations between reported levels of nature connectedness, positive personality traits and other pro-environmental behaviors. Additionally, when scores from the well-known Five-Factor Model of Personality were compared with nature relatedness scores, higher levels of nature relatedness were significantly correlated with increased *extraversion, agreeableness, conscientiousness,* and *openness* (Nisbet, 2009).

Although nature connectedness is believed to be a somewhat consistent trait present throughout someone's life, a few factors are thought to contribute to the

development and presence of this characteristic. Demographically speaking, both women and older individuals report higher levels of nature connectedness than men and younger age groups (Dean et al., 2018). When looking at other influences present within individuals' lives, two potential indicators for nature connectedness included exposure to nature at a young age and being raised within cultural contexts where attitudes towards nature were open and favorable (Capaldi, et al., 2014). Although it is believed that this connection may be established during childhood and nurtured throughout life, adults are still able to develop this sense of connection later in life (Capaldi, et al., 2014). Knowing the benefits associated with higher levels of nature relatedness, the sooner that individuals are encouraged to engage with and identify with nature in their lives, the richer connection and benefit they may experience.

Ways in Which Nature Promotes Wellness

As this integral relationship has been studied and the benefits of nature have been operationally defined and observed, findings have concluded a multitude of benefits to humans associated with exposure to nature and nature connection/relatedness including improved physical and mental wellness and enhanced cognitive, emotional and interpersonal functioning (Nisbet et al., 2011). Across the world, chronic diseases such as cardiovascular disease and diabetes, which are connected to urbanization and sedentary lifestyles, are the leading cause of decreased life expectancy, with the second leading cause being difficulties related to mental illness (Dean et al., 2018). When considering both the physical and psychological health challenges confronting our modern-day society, promoting increased exposure to, and connection with nature may be just the

wide-reaching, holistic approach that is called for in starting to address this global wellness crisis.

Physical Wellness Benefits

A multitude of physical health benefits are associated with both access to nature and time spent outdoors, including increased engagement in physical activity, improved immune system function, improved sleep, improved general health, reduced mortality and advanced healing responses (Frumpkin et al., 2017). Time spent in the outdoors has even been negatively correlated with conditions such as asthma (Lovasi et al., 2008) obesity, high blood pressure (Shanahan et al., 2016) musculoskeletal pain (Maas, et al., 2009) and congestive heart failure (Mao et al., 2017).

Physical Activeness. For children, green spaces have been shown to encourage engagement in both structured and unstructured play, facilitating healthy social development as well as regularly increased physical activity and decreased rates of childhood obesity (Frumpkin, et al., 2017). This type of play also supports children's development of fine motor skills by providing them with a novel and engaging environment to move around and maneuver within (Kellert, 2005). However, children are not the only ones who demonstrate an increased desire to engage in recreation when provided with green, outdoor spaces; adults with reasonable physical and cultural access to natural spaces are three times as likely to engage in physical activity (Barton, et al., 2016).

Healing and Experience of Pain. Exposure to nature not only promotes preventative physical wellness, contact with nature and natural elements has also been demonstrated to

aid in the healing process across several settings. One of the most well-known studies demonstrating this was conducted in a Pennsylvania hospital (Ulrich, 1984) looking at differences in patient recovery following gallbladder surgery. Within this study patients received the same post-operative care, but half were provided with a window facing a wooded area while others faced a brick wall. Results demonstrated that those with a view of the wooded area experienced an overall improved recovery, including a 10% faster recuperation rate, a 40% reduction in post-op pain killer utilization, and a 75% improvement in post-op demeanor per nurse reports (Ulrich, 1984).

One significant aspect of these findings was measurable decrease in patients' experience of pain and pain tolerance. Other studies have demonstrated the positive impacts that exposure to natural settings and elements can have on an individual's experience of pain, both in acute (Diette et al. 2003; Lechtzin et al. 2010) and chronic cases (Han et al. 2016). One study conducted to look at the impacts of a two-day forest therapy program on experience of chronic pain demonstrated that, when compared to a control group, those who participated in the 2-day forest therapy program reported significant decreases in both pain and depressive symptoms. Notably, participants also showed significantly improved scores in measured NK (Natural Killer) cell levels, which are associated with improved immune function, as well as higher levels of HRV (heart rate variation), associated with heart health (Han et al., 2016).

Psychological Wellness Benefits

When considering the mind-body connection at work within human health, it makes sense that nature connectedness and exposure to nature would be associated with a multitude of psychological benefits as well. Studies have demonstrated the power of

nature in impacting psychological resilience and recovery, as well as enriching the cognitive, emotional and social development and wellness of individuals across the lifespan (Capaldi, et. al, 2014).

Some researchers have gone as far as to argue that the human-nature connection is a "basic psychological need," exploring nature-relatedness from the perspective of a phenomenon called *place attachment*, which examines human attachment to places based on the psychological processes of familiarity, emotional and behavioral attachment, and identity (Baxter & Pelletier, 2019). These are the processes typically noted within the context of attachment theory, when observing the impact of fundamental human attachments such as parent-child, close friends and romantic partners. This study demonstrated that both nature-relatedness and place attachment are associated with increased wellness domains, such as self-esteem, sense of meaning, and sense of belonging (Baxter & Pelletier, 2019).

Stress Reduction. One prominent psycho-evolutionary theory that works to explain the psychological benefits of exposure to nature is the Stress Reduction Theory (SRT). This theory was developed by Ulrich in the early 1990s and proposed that "when individuals are in contact with natural elements that support survival (e.g., water, food, etc.) they experience a psychophysiological response involving a decrease in physiological arousal, reduced negative affect and increased positive affect" (Dean, et al., 2018, p. 2). In demonstrating impacts of this phenomenon, Ulrich's 1991 study exhibited individuals experiencing greater decreases in stress symptomatology, including improved affective state, heart period, muscle tension, skin conductance and blood pressure, following a

viewing of a nature film, versus when viewing one featuring urban settings (Ulrich, 1991).

Improved Cognitive Function. When specifically considering children and adolescents, outdoor-based education and play are ideal opportunities for connecting with and engaging in natural settings, as well as reaping the benefits of doing so. Numerous studies have demonstrated the positive impacts of nature connection and engagement for children including improved emotional health, social development and cognitive functioning. One notable support to cognitive functioning may be observed in findings looking at the impacts of time spent in nature on child Attention Deficit Hyperactivity Disorder (ADHD) symptoms. One study, which observed the impact of children's play spaces, showed that children who regularly play in green play settings had milder ADHD symptoms than children who play in built outdoor and indoor settings. They also found that the impact of green play settings on children's ADHD symptoms did not vary based on family income or the child's gender (Taylor & Kuo, 2011). Another study by Taylor and Kuo (2009) more specifically found that children concentrate better after walking in a park setting, as compared to either a downtown or residential setting, and that concentration scores of those with ADHD who walked in a park began to approach those of children without ADHD and/or mirrored the scores of those taking ADHD medication (Taylor & Kuo, 2009).

One of the ways that these attentional improvements may be explained is the Attention Restoration Theory (ART) which proposes that "contact with nature helps replenish 'directed attention'—a form of focused concentration that can become depleted in urban environments—through unconscious cognitive processes" (Dean et al., 2018, p.

2). This theory, originally developed by environmental psychologists, Stephen and Rachel Kaplan in the early 1980s and 1990s, works to describe what contributes to a cognitively restorative environment and how nature provides the setting for this restoration to take place (Kaplan, 1995). ART identifies 4 key properties as contributing to a restorative environment: 1) Being Away, 2) Soft Fascination, 3) Extent and 4) Compatibility. Natural environments have been shown to possess these characteristics due to the psychological and physical separateness that they provide from everyday life and thoughts, the sensorial opportunities for fascination that they possess, the extent to which one may be completely immersed and engaged in their experience in nature, and the intrinsic enjoyment and familiarity that is experienced while in nature (Brymer, Freeman & Richardson, 2019).

Mindfulness and Meditation Practices. Along with the development of the Attention Restoration Theory (ART) and Stress Reduction Theory (SRT), researchers have started to acknowledge the inherent overlap between benefits experienced through exposure to nature and those experienced through mindfulness and meditative practice. Mindfulness may be defined as "being attentive to and aware of what is taking place in the present." (Brown & Ryan, 2003). Nature connectedness, well-being and mindfulness have each been shown to correlate with one another (Howell et al., 2011) and some studies have even demonstrated that the positive impacts of mindfulness and nature connectedness may be boosted when practiced in combination with one another (Djernis et al., 2019). This may be attributed to the positive aspects of one promoting the positive aspects of the other, such as mindfulness facilitating an enhanced sensory impact within natural settings, fostering a strengthened nature connectedness (Howell et al., 2011).

One practice promoting mindful awareness within natural settings is known as "forest bathing." Forest bathing or *shinrin-yoku* is a practice, originating in Japan, which promotes physical and emotional wellness through mindful awareness and engagement within forested areas. When forest bathing, meditative practices are facilitated by a trained forest bathing guide and focus participants' attention on their sensorial experience, including sight, sound, touch, smell, and sometimes taste as they observe their surroundings (Farrow & Washburn, 2019). In doing this, forest bathing sessions may incorporate a combination of activities including walking, standing, lying, sitting, and deep breathing (Farrow & Washburn, 2019). Emotional wellness benefits include improved mood, boosts in energy, a reduction in blood pressure and stress levels, and higher levels of creativity (Li, 2018). Forest bathing has been utilized with several different clinical populations and has produced significant decreases in reported anxiety and depression symptoms for participants across age groups (Furuyashiki et al., 2019; Yu et al., 2017; Guan et al., 2017).

Transpersonal Experience Within Nature. As previously mentioned, nature relatedness can involve an individual's "feelings of oneness" with nature and a sense of overlap between nature and their self (Dean et al., 2018). This affiliation with nature, which is central to the field of ecopsychology, is strengthened and developed through time spent in nature and meditation upon one's interconnectedness with nature (Dean et al., 2018). Transpersonal psychology, a field of psychology which asserts "our ordinary experience of ourselves as separate autonomous beings is incomplete and inaccurate," has acknowledged the complementary claims founded within ecopsychology, as they support the benefits of non-dualistic thought cultivated through connection with nature.

Non-duality, a central value to transpersonal psychology, describes a spiritual state of transcendent consciousness where one does not view things through the lens of I-other, but rather views reality in a non-dichotomous and interconnected manner (Davis, 1998). Within this state of self-transcendence, one's sense of self is expanded to encompass a holistic harmony or unity with others and the greater world (Davis, 1998). This self-transcendent, non-dualistic experience while communing with nature may be fostered by what transpersonal psychologists describe as "peak experiences." These experiences have been described as "feeling that you were in close contact with something holy or sacred," "feeling that you were in harmony with the universe," and "experiencing the beauty of nature in a deeply moving way" (Wuthnow, 1978).

Social Wellness. Heightened levels of self-transcendence are not only associated with improved outlook on life for the individual, but are also linked to the cultivation of compassion and an individual's likelihood to engage in a more socially positive manner, both with their fellow man and the environment (Davis, et al., 1998). This association aligns with the greater body of research looking at the relationship between time spent in nature, nature connectedness, and social engagement and wellness. Examples include an improved sense of social connection, appreciation for community diversity and improved local ecology and sustainability as a result of the establishment of community gardens (Wakefield et al., 2007), improved longevity and social connectivity among senior citizens when provided with natural walking spaces (Takano, Nakamura & Watanabe, 2002) and decreases in physical and verbal aggression rates among elementary school children when provided with green play spaces, as well as decreases in solitary play and increases in inclusion and small-group recreational activities (Rany, Hendry & Yee,

2018). These findings demonstrate that both through the mindful cultivation of interconnectedness supported by natural spaces, and the physical gathering places facilitated by outdoor spaces, that nature has been shown repeatedly to foster intergenerational social health amongst individuals and communities.

Nature-Based Interventions and Clinical Practice

Both responding and contributing to the body of research demonstrating the wellness benefits associated with nature exposure and nature connectedness, practitioners have started to develop their practice in ways that reflect, promote and apply the findings associated with this body of literature. These shifts may be noticed in both individual and agency counseling practices, as well as specialized therapeutic programs that have been developed to uniquely promote the therapeutic use of nature and wilderness experiences. This approach to intervention has popularly been referred to as ecotherapy or "green care" and has been born from the field of ecopsychology.

Ecopsychology

Ecopsychology, a field which has been mentioned throughout this paper, is dedicated to integrating the insights and knowledge founded within the fields of ecology and psychology in order to build a society where humans and the natural world hold a relationship of reciprocity and respect rather than control and exploitation. Robert Greenway, founder of the International Community for Ecopsychology, describes the term *ecopsychology* as having "six faces," including "a container for discussions about nature, a basis for healing – for a new therapy, as a call to action, as experiential, as spiritual practice and as language" (Kenel, 2012). Ecopsychology is also concerned with

the broadening of one's self-identification transpersonally to include the "non-human" world. Ecopsychology as a field has promoted the exploration and development of several alternative, nature-based approaches to therapy, as well as broader approach to human wellness (Kenel, 2012).

Ecowellness

The *ecowellness* construct was developed by researcher, Ryan Reese, to draw attention to the benefits associated with the human-nature connection within the counseling context. Ecowellness may be defined as "a sense of appreciation, respect, and awe of nature that contributes to holistic wellness" (Reese & Myers, 2012). Due to the omission of nature in past inventories created to assess wellness, Reese developed the Reese EcoWellness Inventory (REI) to close this gap. The REI includes 61 items that assess for 3 major constructs, including 7 total sub-constructs, using a four-point Likert scale, ranging from 1 (*strongly disagree*) to 4 (*strongly agree*). These constructs include 1) *Access: Physical and Sensory*, 2) *Environmental Identity: Connection, Protection and Preservation* and 3) *Transcendence: Spirituality and Community Connectedness* (Reese et al., 2015).

In creating this inventory, Reese planned to assess the correlates between wellness and one's experience with nature, with hopes to eventually apply what was gathered within work done in clinical settings (Reese et al., 2015). This might include counselors debriefing with a client about the results of the REI and exploring with them about the areas of ecowellness that they feel good about and what areas they feel they could benefit in changing. As this inventory was created with clinicians in mind, it may serve as an

appropriate aid for counselors as they consider the integration of nature-connection in their conceptualization and treatment process (Reese et al., 2015).

Ecotherapy and "Green Care"

Largely in response to the findings of ecopsychology, the "green care" movement has continued to grow and spread its influence across clinical settings and communities striving for wellness. A term often used interchangeably when referring to the modern practice of green care is "ecotherapy." Ecotherapy, although distinctive from ecopsychology in its broader employment reaching outside of strictly psychological settings, continues to largely draw upon the findings of ecopsychology in many of its forms and practices. Today, ecotherapy is used as an umbrella term including the practices of horticultural therapy, animal assisted therapy, wilderness therapy, green exercise and other nature-based therapies (Jordan and Hinds, 2016). Each of these approaches involves the prescriptive and/or interventive utilization of natural settings and elements in both the prevention of illness and promotion of holistic wellness.

Horticultural Therapy. The field of horticultural therapy (HT) has its origins in past practice but has only recently taken off as a recognized and developed therapeutic modality over the last three decades (Kenel, 2012). HT is a process through which gardening activities, interaction with foliage and proximity to nature is utilized in the rehabilitative process and has been shown to reduce stress, and improve self-esteem and sleep (Summers & Vivian, 2018). Even simple contact with dirt has been linked to improved happiness and relaxation, explained by the presence of "antidepressant microbes" known as *mycobacterium vaccae* present within soil, which cause cytokine levels to rise, increasing serotonin production in the brain. Mycobacterium vaccae has

even been found to produce similar effects on neurons in the brain that drugs like Prozac can provide, but without the side effects (Lowry et al., 2015).

Often HT is facilitated through the provision of "therapeutic garden" spaces, which may differ from regular garden spaces by featuring modification to increase accessibility, organized and easily maneuverable spaces for people and plants to interact, hazardous-free conditions (both physically and chemically), and intentionality of design in creating opportunities for engaging the five senses (American Horticultural Therapy Association, 1995). HT has been shown to be especially effective when working with elderly populations; for dementia patients specifically, engagement in horticultural therapy has led to improved cognitive functioning and improved engagement and mood (Summers & Vivian, 2018). Other presenting concerns that horticultural therapy has been shown to have positive treatment outcomes for include post-traumatic stress, depression, anxiety, substance abuse and schizophrenia (Summers & Vivian, 2018; Wise, 2015; Ascencio, 2019).

Animal Assisted Therapy. Animal assisted therapy (AAT) has become widely recognized and accepted as effectively aiding in the therapeutic process for a variety of populations, having a specifically notable compatibility for working with children and older clients (Kenel, 2012). AAT therapy may be defined as the use of interaction with animals for the purpose of improving a patient's mental, social, emotional and physical functions, and is utilized across a variety of settings including hospitals, clinics, rehabilitation centers, nursing homes, prisons, private homes and animal farms (Koukourikos et al., 2019). Animals most commonly involved in AAT include dogs, cats, dolphins, horses, rabbits, birds and other farm animals. AAT utilizes the presence of

animals, benefiting the client with their calming nature and aiding trust building between a client and their clinician. With Alzheimer patients, the presence and assistance of therapy animals has been shown to improve overall quality of life through their aid in grounding through touch, companionship, and encouraging mindfulness through their calm and attentive presence, aiding in decreased agitation, stress and blood pressure (Kenel, 2012).

Animal assisted programs have been implemented widely to support children, adolescents, adults and elderly clients who are engaging in treatment for mental health disorders. Within this approach to treatment, animals serve the very important role of providing a client with support through unconditional positive regard, acceptance and presence. Animals also provide the opportunity for building social awareness through providing feedback to clients, in the moment, as they respond to their behaviors while interacting with both the animals and other people around them. As clients are encouraged to tune into these body cues from animals in their responses, they are able to notice and reflect on their presence in a non-threatening and less confrontational manner to adopt more appropriate social behaviors. Some disorders that have specifically been studied for efficacy of AAT include depression, anxiety disorders, autism, and post-traumatic disorders (Koukourikos et al., 2019).

Wilderness and Adventure Therapy. Nature-immersive therapeutic approaches are based upon alternative adventure-based programs, such as Outward Bound, which were originally developed in the 1960s as an alternative to working with youth experiencing emotional and behavioral challenges. Since then, several outdoor programs have developed, such as adventure therapy, wilderness therapy and outdoor behavioral health

(OBH), as they have harnessed the wellness benefits gained through both adventure and nature-immersive experiences (Reese, 2018). Therapeutic elements that are uniquely characteristic of wilderness therapy include experiential learning, group trekking (hiking, canoeing, climbing), social engagement, overcoming group challenges, natural consequences, and connection with nature (Reese, 2018).

Efficacy for wilderness therapy has been specifically demonstrated in working with adolescents with emotional, behavioral or addiction problems as well as with veterans recovering from combat-related post-traumatic responses. Specifically, in working with youth, wilderness therapy has been shown to uniquely assist in improving adolescent attachment and family well-being and functionality (Summers & Vivian, 2018). Wilderness therapy approaches have also been shown to effectively decrease anxiety, depression, and stress symptoms, while supporting the development of healthy self-esteem (Summers & Vivian, 2018).

Green Exercise and Nature Play. With both time spent in nature and physical activity being well-known contributors to well-being, researchers hoped to explore the unique benefits that exercising in green space might support. As studies uncovered unique benefits occurring during exercise in natural spaces, the term “green exercise” was coined. When measuring for and reporting the unique wellness qualities of green exercise, researchers primarily adopt three different methodological approaches: 1) comparing outcomes of built vs. nature-based outdoor exercise, comparing outcomes of indoor exercise to those of outdoor exercise and 3) employing ergometers in laboratory settings to control the exercise component and examine the importance of the visual exercise environment (Harle, 2018). Exercising within natural settings has been shown to

produce a multitude of positive outcomes, when compared to indoor exercise, including improvements in self-esteem and mood, in response to reductions in tension, depression, irritability and confusion, as well as heightened levels of concentration and mindfulness (Harle, 2018).

For children and adolescents, natural, green spaces provide excellent environments for spontaneous, experientially based play and motor skill development, as well as the opportunity for building problem solving skills and other important social skills, such as collaboration and compromise (Kellert, 2005). Nature-based activity has also been shown to produce similar benefits for children as observed in the adult population, such as lower levels of depression and anxiety, and improved self-esteem. Additionally, children are more likely to engage in physical activity when provided with access to adequate natural spaces, with their level of activity directly predicted by its availability; one study showed that for every 1 percent increase in park area, there was a 1.4 percent increase in the physical activity of those youth with access to this space (Harle, 2018). Higher levels of physical activity in childhood are associated with numerous positive projections for wellness across the lifespan including enhanced fitness, greater bone health and cognitive function, favorable cardiovascular and metabolic disease risk profiles, healthier blood pressure and heart rate and less body fat production into adulthood (Harle, 2018).

Adapting Traditional Talk-Therapy to Include Nature-Based Approaches

While considering varying levels of comfort, clinicians may develop treatment approaches which enrich client growth by utilizing a variety of nature-based ideas and techniques. A holistic nature-based approach not only includes prescription and

intervention, it also involves the way in which clinicians approach their assessment and conceptualization process. Examples of questions that ecowellness researcher, Ryan Reese (2016), suggests that counselors consider asking their clients include “How do you define nature?” “Where do you feel most connected with nature and how does that impact your sense of connection to self, others, and your experience of spirituality?” “What role did nature play in your family or community growing up?” and “In what ways do you envision bringing nature into your counseling experience?” (Reese, 2016). In asking questions such as these, counselors are able to gather a range of information regarding client access, exposure, connection and comfort within natural settings. If a clinician is able to identify through assessment that 1) a client could benefit from increased exposure to time spent outdoors and 2) that this exposure would not lead to any readily predictive harm, then they may start to consider with clients what this could look like.

Walk and Talk Therapy. One way that clinicians are incorporating nature into therapy is getting outside during session. Walk and Talk therapy (W&T) allows clients and clinicians to engage in traditional talk therapy with the added benefits of exposure to greenspace, physical activity and mindfulness coping skills fostered through being present within a natural environment (Birthistle, 2017). Specific populations that may benefit from walk and talk therapy include adolescent clients, clients with ADD/ADHD diagnoses and clients dealing with anxiety disorders and other social skill deficits (Phillips, 2018; Birthistle, 2017). This compatibility is due to W&T providing an alternative to sitting still and face to face, which may feel intimidating or incompatible for a variety of client populations, as well as those who are uncomfortable with discussing intimate and sensitive information while facing someone directly. The natural

environment also provides several appealing sensory opportunities for clients to practice breathing, grounding and other coping skills and techniques (Birthistle, 2017).

Nature Prescription. Another way that clinicians have started to incorporate nature connection and exposure into their treatment approaches by involving the use of nature prescription. Examples of this include everything from encouraging clients to increase the amount of time they spend outside, to engaging in new activities such as gardening, hiking or camping, to engaging in mindfulness and meditation practices in outdoor spaces. These types of "prescriptions" or assignments facilitate and encourage growth across a multitude of client needs, including improved self-care practices, an expanded sense of connectedness and belonging and opportunity for facilitating enriched relationships with friends, family and other community. Clinicians may also suggest that clients utilize an outdoor space in supporting their process of contemplating challenging decisions or dilemmas. One specific assignment developed to support increased mindfulness involves clients identifying a "special space" in nature and returning to it several times a week, during varied times of day and weather conditions, over a set amount of weeks. By returning each week to this spot, clients may experience a heightened sensory awareness, reconnection and orientation with a natural place and an increased sense of belonging (Philips, 2018).

"Greening" Indoor Spaces. For a variety of reasons, it may not be appropriate or feasible for counselors and clients to immerse themselves within natural settings, either during or outside of session, but this doesn't mean that clients cannot still be exposed to a wide range of benefits provided through contact with nature. One way counselors may still facilitate this benefit is by "bringing the outdoors in" to their office spaces (Phillips,

2018). This could include anything from decorating office and common spaces with shades of blue and green, live foliage, art featuring natural images, decorative features with running water, full-spectrum lights which mimic the properties of sunlight, and/or other living creatures such as aquarium animals, birds, small mammals, cats or dogs.

Similarly, clinicians may encourage clients to arrange and add to their living spaces such as their work settings and homes to incorporate natural elements in these same ways (plants, animals, nature imagery, sunlight/ full spectrum lighting, etc.). Clinicians may also explore with clients about utilizing nature elements to support areas of daily functioning; one study (Reese, 2016) demonstrated that individuals preferred nature media when aiding them in sleeping, studying and de-stressing. Although direct contact with nature has been shown to be most effective, technological nature is still shown to be better than no nature at all (Reese et al., 2016).

Nature as Metaphor. One nature-based intervention that may straddle the line and work along a spectrum of indoor/outdoor settings is the use of nature as metaphor (Phillips, 2018). The universal, complex, resilient and transcendent characteristics, as well as many others, held within the natural world contribute to the unique and powerful employment of nature metaphor in counseling work. Whether it be while physically trekking along a wooded path, or sitting in a counseling office discussing the beautiful process of life, growth, and death found within the life-cycle of a forest, nature metaphor may serve as a powerful holding space and scaffold as clients and counselors process and make meaning of life's most mysterious, intangible and sometimes painful experiences.

In utilizing nature as metaphor, a client may experience anything from: the sobering comfort of acknowledging their own smallness within their greater earthly and

cosmological home, to a sense of kinship with the spirit and life-rhythm of a woodland creature, to embracing meaning and order through likening the interdependence of human life with that of a rich and thriving ecosystem. Metaphorical meaning making may be facilitated by counselors through even the simplest nature-based prompts, such as cards with nature elements depicted, guided imagery or other expressive modes.

Critiques and Ethical Considerations

As nature-based techniques and interventions are introduced and integrated into clinical practice, relevant critiques and ethical concerns have naturally arisen, from both outside and within the practitioner community. These critiques and concerns range anywhere from complaints of cultural appropriation in the adaptation of nature-based practices, to the lack of empiricism in demonstrating efficacy for nature-based interventions, to safety and ethical considerations when engaging with a variety of client populations.

As a wide array of lay people and practitioners have started to engage in the world of "green care," there has been commentary surrounding the potential cultural appropriation or misuse of outdoor-based practices. One area of sensitivity includes the appropriative use of the term "forest bathing," which has roots founded within the Japanese practice of *shinrin-yoku*, and discussion surrounding the appropriate acknowledgement and adaptation of this practice in Western culture. Another example of these concerns may occur with the cultural appropriation of "totems" or "spirit animals" in the utilization of nature metaphor. The insensitive use and misrepresentation that may occur when these ideas are referenced in westernized culture is an important thing for practitioners to be sensitive to in their language and practice. A third example of potential

concern for appropriation is the “rite of passage” motif utilized within a wide array of wilderness and adventure therapy experiences, which often misrepresents or disregards the cultural and spiritual significance of the historical origins of this practice across the world (Norris, 2011).

Several scholars within the helping professions have advocated for the development of ethical parameters for nature-based counseling approaches as there are several ethical considerations when incorporating nature-based practice into traditional counseling practice. Currently, the closest thing to this that exists is The Association for Experiential Education’s Ethical Guidelines for the Therapeutic Adventure Professional (EGTAP), which provides some guidance to an array of practitioners, but does not specifically address the work of mental health counselors. Some potential concerns specific to nature-based therapeutic practice include confidentiality in public spaces, doing no harm, and ensuring counselor competence in facilitating activities (Reese, 2016). In reducing the likelihood of harm, it is important to keep in mind special considerations when working with certain populations. Examples of these types of considerations could include: deciphering the appropriateness of being one-on-one with a minor for an extended period of time in a remote area, safety considerations in assigning a couple with history of domestic abuse to engage in a secluded setting, or whether to bring a client with a history of trauma and heightened sensitivity into an outdoor setting where unexpected and triggering stimuli may occur.

Discussion: What Does this Mean for Clinicians?

One way that clinicians may consider integrating knowledge of human-nature connection into their practice is by engaging in advocacy within their communities for

the preservation of natural spaces, and equal access for all. Not only are those living in urban settings less likely to recreate outdoors due to safety concerns, they are also less likely to have access to green views or spaces that they can safely play in, such as parks, courtyards or wooded areas. Furthermore, these groups are also grossly subjected to environmental hazards, chemical accidents and air pollutants (Strife & Downey, 2009). Because racial minorities and socio-economically depressed families predominantly inhabit these urban settings, they are most likely to miss out on the many benefits presented through access to these resources (Strife & Downey, 2009).

If these implications are recognized and acknowledged, this issue begins to take on the form of racial and socioeconomic-based oppression. Counselors may engage in advocacy through the practice of psychoeducation regarding the benefits of exposure to natural spaces within the community or with state legislatures and other relevant policy makers. Other areas of advocacy for counselors may include lobbying for more public parks in areas where outdoor and natural spaces are limited. It could also involve reaching out to local school boards and vouching for the incorporation of outdoor time in school curriculum to stimulate better cognitive function and social development. Proactivity on this level may contribute to preventative wellness for individuals, as well as promote holistic health for entire communities.

When considering intervention from a nature-based perspective, both a client's surrounding environment and quality of leisure and recreational activities would be important to consider when gathering a comprehensive conceptualization of wellness. Based on the literature, especially when working with individuals struggling with mood disorders or other co-occurring physical health problems, it would be useful to explore

with the client and their other health care providers regarding the potential prescriptive use of exposure to nature and time spent outdoors. This could include a variety of activities, such as the prescriptive use of "greening" living spaces, outdoor meditation, nature walks, gardening, exercise, play, engagement with outdoor-based organizations and clubs or other outdoor recreational activity. For more specific presenting concerns or populations where nature therapy may be uniquely appropriate, referrals may also be made for specific outdoor-based programs such as outdoor-inclusive residential programs, animal-assisted therapy facilities and a variety of adventure/wilderness therapy programs.

These forms of intervention and natural settings may also be successfully utilized while in session with a client, as a mode for enhancing therapy. This may take on the form of anything from bringing natural elements or images into the therapy room, to incorporating nature-themed interventions, to taking the counseling session outdoors and engaging in a therapy session while either sitting or walking in a natural setting. As can be gathered from the literature, no matter the population or setting, there are many ways to enrich treatment and client wellness with the incorporation of nature education and therapeutic approaches.

Conclusion

As the normative ways of life continue to pull humans from regular daily contact and communion with the natural world, intentional steps towards immersion and connection are becoming more necessary to maintain this vital relationship. Over the past 40 years, researchers have become increasingly invested in unearthing a plethora of advantages that humans gain through connection with and exposure to nature, including

wellness benefits across physical, psychological, emotional and social realms. This extensive body of literature clearly points to the integral role that nature plays in the holistic health of humanity.

In addition to the many ways that nature may enrich one's everyday life, there have been a multitude of interventions and prescriptive applications researched and developed for the utilization of nature in the treatment of both physical and psychological pathologies. These include a variety of options such as greening indoor spaces, further incorporating contact with nature into daily life, engaging nature-based approaches within traditional talk-therapy and participating in nature-based therapeutic programs. For clinicians this also includes the potential for thoughtfully incorporating ideals of nature connection into conceptualization, treatment planning, psychoeducation, and advocacy practices. For many, nature is an accessible and largely untapped resource when it comes to enhancing wellness and contributing to an overall improved quality of life. No matter how big or small the change, individuals may engage with this knowledge and allow it not only to shape their client care, but also serve as a form of nurturance and grounding for oneself as they engage in their own self-care practices.

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